

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 09689	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/JP2004/016457	International filing date (day/month/year) 29/10/2004	(Earliest) Priority Date (day/month/year) 31/10/2003
Applicant TAKEDA PHARMACEUTICAL COMPANY LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

PYRIDINE COMPOUNDS AS INHIBITORS OF DIPEPTIDYL PEPTIDASE IV

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/016457

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D213/80 C07D213/82 C07D213/56 C07D213/55 C07D401/12
 C07D213/59 C07D401/06 C07D413/06 C07F9/40 C07D213/71
 C07D213/75 C07D409/12 C07D405/12 C07D213/12 C07D413/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D C07F A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, CHEM ABS Data, WPI Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 218 431 B1 (SCHOEN WILLIAM R ET AL) 17 April 2001 (2001-04-17) cited in the application column 161; example 73	1-20
A	column 62; example CXLVI column 104; figure 7 column 189 - column 190; examples 120-123 column 66; table 2B	
X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 212 (P-873), 18 May 1989 (1989-05-18) -& JP 01 029979 A (MITSUBISHI ELECTRIC CORP), 31 January 1989 (1989-01-31) abstract examples 73-82,92-118	1-20

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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

2 February 2005

Date of mailing of the international search report

17/02/2005

Name and mailing address of the ISA

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Kollmannsberger, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/016457

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SAMMOUR, A. ET AL: "Base catalyzed addition reaction with diaroyl ethylenes and some chalcones" XP002315994 retrieved from STN Database accession no. 1979:611215 compound with RN 71543-88-9 abstract & EGYPTIAN JOURNAL OF CHEMISTRY , VOLUME DATE 1976, 19(6), 989-1011 CODEN: EGJCA3; ISSN: 0367-0422, 1979, -----	1-11,13, 15
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; PAVEL, G. V. ET AL: "Condensation of aldehydes and ketones. XVIII. Aminomethylation of methylene- and benzylidenediacetophenone" XP002315995 retrieved from STN Database accession no. 1968:496405 compound with RN 19731-37-4 abstract & KHI MIYA GETEROTSIKLICHESKIKH SOEDINENII , (3), 484-6 CODEN: KGSSAQ; ISSN: 0132-6244, 1968, -----	1-11,13, 15
X	EP 0 742 208 A (GRELAN PHARMACEUTICAL CO., LTD; LABORATOIRES FOURNIER S.C.A) 13 November 1996 (1996-11-13) page 24; examples 43,44 -----	1-11,13, 15
A	WO 03/068757 A1 (F. HOFFMANN-LA ROCHE AG) 21 August 2003 (2003-08-21) cited in the application claims -----	1-21
A	US 2003/195188 A1 (BOEHRINGER MARKUS ET AL) 16 October 2003 (2003-10-16) claims -----	1-21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/016457

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 19 and 20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/016457

Patent document cited in search report		Publication date		Patent family member(s)	Publication date			
US 6218431	B1	17-04-2001	AU	3897197 A	20-02-1998			
			BG	103200 A	30-11-1999			
			BR	9710637 A	31-10-2000			
			CA	2262434 A1	05-02-1998			
			CN	1239474 A	22-12-1999			
			CZ	9900308 A3	12-05-1999			
			EP	0934274 A1	11-08-1999			
			HR	970425 A1	31-08-1998			
			HU	0100324 A2	28-05-2001			
			ID	19422 A	09-07-1998			
			JP	2001512416 T	21-08-2001			
			KR	2000029723 A	25-05-2000			
			NO	990399 A	29-03-1999			
			NZ	333951 A	29-09-2000			
			PL	333465 A1	20-12-1999			
			RU	2195443 C2	27-12-2002			
			TR	9900163 T2	21-04-1999			
			TR	9902325 T2	21-02-2000			
			TR	9902326 T2	22-05-2000			
			TW	520360 B	11-02-2003			
			WO	9804528 A2	05-02-1998			
			ZA	9706730 A	29-07-1999			
			<hr/>					
			JP 01029979	A	31-01-1989	NONE		
			<hr/>					
			EP 0742208	A	13-11-1996	EP	0742208 A1	13-11-1996
AU	5763596 A	21-11-1996						
CA	2194481 A1	07-11-1996						
WO	9634856 A1	07-11-1996						
EP	0769007 A1	23-04-1997						
HU	9700005 A2	28-05-1998						
JP	10506922 T	07-07-1998						
NO	965459 A	18-12-1996						
US	5872115 A	16-02-1999						
<hr/>								
WO 03068757	A1	21-08-2003	AU	2003206833 A1	04-09-2003			
			BR	0307665 A	04-01-2005			
			CA	2474578 A1	21-08-2003			
			EP	1476435 A1	17-11-2004			
			US	2003216382 A1	20-11-2003			
<hr/>								
US 2003195188	A1	16-10-2003	AU	2003206834 A1	04-09-2003			
			BR	0307576 A	11-01-2005			
			CA	2474460 A1	21-08-2003			
			WO	03068748 A1	21-08-2003			
			EP	1476429 A1	17-11-2004			
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